

then stores the channel information in the memory in the channel probe management system so other systems, such as performance management systems or fault management systems, can access the channel information.

FIG. 20 is a block diagram illustrating the market hub 400 connected to multiple head ends for channel probe management in an example of the invention. The additional components of the market hub 400 and the head end 500 as shown in FIGS. 4 and 5 are not shown in FIG. 20 for the sake of clarity in order to focus on the components related to the operation of the channel probe management. Also, there are numerous head ends and channel probes in the broadband wireless system 100 but are not shown in FIG. 20 for the sake of clarity. The market hub 400 includes the market performance management system 430. The market performance management system 430 includes a channel probe management system 2010 and the market database system 435. The channel probe management system 2010 includes a polling system 2012 and a database interface system 2014. A head end 2020 includes a channel probe 2022. The head end 500 includes the channel probe 590. The head end 2030 includes the channel probe 2032. The market hub 400 is connected to the head end 2020, the head end 500, and the head end 2030.

The channel probe management system 2010 is any system configured to (1) generate an instruction to request channel information from a communication device in the broadband wireless system 100, (2) transmit the instruction to the communication device, (3) receive the channel information from the communication device, and (4) store the channel information in memory.

FIG. 21 is a flow chart for the channel probe management system 2010 in an example of the invention. FIG. 21 begins in step 2100. In step 2102, the channel probe management system 2010 generates and transmits an instruction to request channel information to a communication device in the broadband wireless system 100. In this embodiment, the communication device is the channel probe 590 and the instruction is an SNMP gets message. In step 2104, the channel probe management system 2010 receives the channel information from the channel probe 590. In step 2106, the channel probe management

system 2010 stores the channel information in the market database system 435. FIG. 21 ends in step 2108.

Remote Monitoring (RMON) Probe Management -- FIGS. 22-24

FIG. 22 is a block diagram that illustrates an RMON system in the prior art. An RMON probe 2210 is connected to a NetScout Manager 2220. The NetScout Manager 2220 is connected to the RMON database 2230. The RMON probe 2210 is comprised of a tap and the probe server. The tap is a type of Gigabyte Ethernet repeater. The probe server is connected to the tap and listens to the traffic passing over the wire. The probe server stores the RMON probe information including RMON statistics. The NetScout Manager 2220 then accesses the raw RMON probe information. The NetScout Manager 2220 communicates with the probe server via a 10 MB Ethernet side-band data connection. The NetScout Manager 2220 generates and stores RMON management information. The RMON database 2230 also stores RMON database information.

Unfortunately, the performance systems do not have access to the information in the RMON probe 2210, the NetScout Manager 2220, and the RMON database 2230. Thus, performance systems at the market, regional, and national levels do not use RMON information for evaluating the performance of a communication network.

FIGS. 23 and 24 show one embodiment for RMON probe management in an example of the invention. An RMON interface system retrieves RMON information from the different RMON systems, such as the RMON probe, the NetScout Manager, and the RMON database. The RMON interface system then stores the RMON information in a database to provide access to the RMON information for other performance systems.

FIG. 23 a block diagram that illustrates the market hub 400 that includes an RMON system in an example of the invention. The market hub 400 includes the market performance management system 430. The market performance management system 430 includes an RMON interface system 2310 and the

market database system 435. The market hub 400 is connected to an RMON probe 2210, a NetScout Manager 2220, and a RMON database 2230. The RMON probe 2210 is connected to the NetScout Manager 2220. The NetScout Manager 2220 is connected to the RMON database 2230.

FIG. 24 is a flow chart for the RMON interface system 2310 in an example of the invention. FIG. 24 begins in step 2400. In step 2402, the RMON interface system 2310 generates a first instruction to request RMON probe information from the RMON probe 2210. In step 2404, the RMON interface system 2310 transmits the first instruction to the RMON probe 2210. In step 2406, the RMON interface system 2310 receives the RMON probe information. The RMON interface system 2310 stores the RMON probe information in memory in step 2408. In this embodiment, the RMON interface system 2310 stores the RMON probe information in the market database system 435.

In step 2410, the RMON interface system 2310 generates a second instruction to request RMON management information from an RMON manager. In this embodiment, the RMON manager is the NetScout Manager 2220. In step 2412, the RMON interface system 2310 transmits the second instruction to the RMON Manager. In step 2414, the RMON interface system 2310 receives the RMON management information. The RMON interface system 2310 stores the RMON management information in memory in step 2416. In this embodiment, the RMON interface system 2310 stores the RMON management information in the market database system 435.

In step 2418, the RMON interface system 2310 generates a third instruction to request RMON database information from the RMON database 2230. In step 2420, the RMON interface system 2310 transmits the third instruction to the RMON database 2230. In step 2422, the RMON interface system 2310 receives the RMON database information. In step 2424, the RMON interface system 2310 stores the RMON database information in memory. In this embodiment, the RMON interface system 2310 stores the RMON database information in the market database system 435. FIG. 24 ends in step 2426.